



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: **Masanori AMANO et al.**

Art Unit: **1794**

Application Number: **10/765,899**

Examiner: **Catherine A. Simone**

Filed: **January 29, 2004**

Confirmation Number: **2604**

For: **LAYER FORMING RELIEF**

Attorney Docket Number: **032111**

Customer Number: **38834**

DECLARATION UNDER 37 C.F.R. §1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Yukihiro FUKUSHIMA, a citizen of Japan, hereby declare and state the following:

1. I graduated from Kwansei Gakuin University of Hyogo, Japan in 1987 with a Master's Degree in Chemistry.

2. Since 2000, I have been employed by Komura Tech Co., Ltd. of Osaka, Japan. For the past two years of my employment therein, I have conducted design of printing plates.

3. I have read and am familiar with the above-identified patent application as well as the Official Action dated August 4, 2008, in the application.

4. I have read and am familiar with the contents of cited references, U.S. Patent Application Publication No. 2002/0047560 to Lee, et al.; Japanese Patent Publication No. 2003-029271 to Komura; and Japanese Patent Publication No. 2002-293049 to Amano cited in the Official Actions in the above-identified application.

5. Based on my knowledge and experience, I provide the following comments with respect to Lee and Amano:

Lee discloses in Figure 5 a multitude of indentations 12a for retaining application fluid formed on a top surface of each of lands 12 of a molding plate 6. Since the lands 12 are formed as linear narrow strips, as shown in Figure 4, printed patterns have linear narrow strip shapes corresponding to the lands 12.

Amano teaches a multitude of minute projections 3 which are distributed on a printing convex portion 2 so as to form a groove between adjoining minute projections 3 for retaining application fluid. The distribution density (occupying area ratio) of the minute projections 3 on the printing convex portion 2 is varied so as to prevent an increase in the thickness of the peripheral region of an oriented film to be printed.

If Lee were modified such that the minute projections 3 of Amano were used in place of the indentations 12a of Lee, I would expect that the resulting printing plate would form printed patterns having linear narrow strip shapes which are lacking uniformity due to the varied distribution density of the minute projections 3. Therefore, I would expect that the combination of Lee and Amano would adversely effect the printing properties, and that barrier ribs would be needed to remove these adverse effects.

However, in the present invention, micro projection portions were combined with printing convex portions, such that they were formed on the top surfaces of the printing convex portions and were arranged to retain organic luminous substances in the space between the microprojecting portions, and such that the amount of organic luminous substances to be retained is controlled by designing the aspect ratio between the depth and bore diameter of the space,

unexpectedly resulting in a highly precise and fine pattern with a uniform thickness in the resulting organic luminous layers, without the need for barrier ribs.

6. Based on my knowledge and experience, I provide the following comments with respect to Lee and Komura:

Komura discloses that a top surface of the linear relief part 12 of the printing plate is formed with a linear recessed part 13 extending along the longitudinal direction of the linear relief part 12 so as to transfer a sealing compound having a high viscosity of 20,000 to 40,000 centipoise which is applied to the top surface. See paragraph [0013]. The linear recessed part 13 contributes to increasing the amount of the sealing compound to be applied thereon and transferred, and forms a sharp edge of the transferred sealing compound. See paragraph [0006].

Komura discloses in the Examples that the height of the sealing compound is within a range of 10 μm to 14.8 μm .

According to Lee, the application fluid to be retained on the top surface of the land 12 of the molding plate 6 is an EL polymer solution 16 having a thickness of not greater than 1000 Å. See paragraph [0029]. Accordingly, the thickness of the printed patterns would not be greater than 1000 Å (0.1 μm). That is, the amount of the retained EL polymer solution 16 of Lee would be less than the amount of the retained sealing compound of Komura. Further, the EL polymer solution 16 of Lee would normally have smaller viscosity than the sealing compound of Komura.

If Lee were modified such that the linear recessed part 13 of Komura were used in the place of the indentations 12a of Lee, I would expect that the resulting printing plate would form

Application No.: 10/765,899
Art Unit: 1794

Declaration under 37 C.F.R. §1.132
Attorney Docket No.: 032111


printed patterns of the EL polymer solution 16 which are deteriorated in sharpness and uniformity. Since the linear recessed part 13 of Komura is provided for retaining a great amount of the sealing compound having a high viscosity, in the proposed modification, the linear recessed part 13 would retain a large amount of EL polymer solution 16 having a low viscosity, which would result in flow of the EL polymer solution 16, and would deteriorate the sharpness and uniformity of printed patterns. Therefore, I would expect that the combination of Lee and Amano would adversely effect the printing properties, and that barrier ribs would be needed to remove these adverse effects.

However, in the present invention, micro projection portions were combined with printing convex portions, such that they were formed on the top surfaces of the printing convex portions and were arranged to retain organic luminous substances in the space between the microprojecting portions, and such that the amount of organic luminous substances to be retained is controlled by designing the aspect ratio between the depth and bore diameter of the space, unexpectedly resulting in a highly precise and fine pattern with a uniform thickness in the resulting organic luminous layers, without the need for barrier ribs.

Application No.: 10/765,899
Art Unit: 1794

Declaration under 37 C.F.R. §1.132
Attorney Docket No.: 032111

The undersigned declares that all statements made herein of his own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that willful false statements may jeopardize the validity of the application or any patent issued thereon.


Yukihiro FUKUSHIMA

Signed this 26 day of November, 2008.